United Nations A/AC.105/751/Add.3

General Assembly

Distr.: General
25 April 2001

Original: English

Committee on the Peaceful Uses of Outer Space

National research on space debris, safety of space objects with nuclear power sources on board and problems of their collisions with space debris

Note by the Secretariat*

Addendum

Contents

		Paragraphs	Page
I.	Introduction	1-2	2
II.	Replies received from Member States and international organizations		2
	Canada		2

* The present document contains replies received from Member States and international organizations between 23 February and 19 April 2001.

V.01-83074 (E) 090501 100501

I. Introduction

1. At its forty-third session, the Committee on the Peaceful Uses of Outer Space agreed that Member States should continue to be invited to report to the Secretary-General on a regular basis with regard to national and international research concerning the safety of space objects with nuclear power sources, that further studies should be conducted on the issue of collision of orbiting space objects with nuclear power sources on board with space debris and that the Committee's Scientific and Technical Subcommittee should be kept informed of the results of such studies.[1] The Committee also took note of the agreement of the Subcommittee that national research on space debris should continue and that Member States and international organizations should make available to all interested parties the results of that research, including information on practices adopted that had proved effective in minimizing the creation of space debris (A/AC.105/736, para. 96).

2. Information received by Member States and international organizations as at 22 February 2001 is contained in the note by the Secretariat of 27 November 2000 and addenda (A/AC.105/751 and Adds.1 and 2). The present document contains information submitted by a Member State between 23 February and 19 April 2001.

II. Replies received from Member States and international organizations

Canada

1. Canada has been active in a number of areas of space debris research over the past years and has also been active in the investigation of Leonid meteor showers despite not operating major ground facilities such as telescopes or radars. Using ground-based equipment, data were collected during an observation campaign of the Leonid shower in November 2000. Although not strictly orbital debris, meteorite showers constitute an important component of the particle population in space that can lead to further fragmentation of hardware.

2. In early 2001, the unique (cold) climate in northern Canada provided an unprecedented opportunity for Canadian scientists to gather and investigate meteor debris. Collaboration and cooperation with international partners enabled the meteor to be tracked, located and analysed to the fullest extent. Significant samples from the meteor were collected and are now undergoing analysis. Information from the event may increase the knowledge of naturally occurring objects and enhance understanding of the effect of impact, thus providing information on how to protect space structures more effectively.

3. Results from continued analysis of hypervelocity impact on composite materials were presented at technical conferences such as the European Space Agency International Symposium on Materials in a Space Environment in June and the Canadian Aeronautics and Space Institute Conference on Astronautics in November 2000. This work, completed in conjunction with international partners in

[1] *Official Records of the General Assembly, Fifty-fifth Session, Supplement No. 20* (A/55/20), para. 99.

the United Kingdom of Great Britain and Northern Ireland and the United States of America, has provided valuable information on the possible effect of impact on the Space Station remote manipulator system, scheduled for launch to the International Space Station in April 2001.

4. In terms of limiting spacecraft debris, Canada's RADARSAT-1 was one of the first spacecraft for which the effect of orbital debris was considered in the design of the spacecraft. Building on that knowledge, RADARSAT-2's design will include features to protect against impact damage due to space debris as well as propellant for de-orbiting, at the end of life, to prevent the spacecraft itself from becoming space debris.

5. Canada recognizes the need to ensure that space will continue to be accessible and safe and shares the concerns of the Inter-Agency Space Debris Coordination Committee (IADC). During the past year, Canada participated in the 18th annual meeting of IADC and is considering filing application for membership in the Committee in order to share its technical efforts in the field of orbital debris for the benefit of all nations.

6. Canada has been an active contributor to the United Nations effort to identify and quantify the space debris problem through the Committee on the Peaceful Uses of Outer Space and remains committed to understand, measure and minimize the effects of space debris.